

1645
#13RECEIVED
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TECH CENTER 1600/2900

1600

RAW SEQUENCE LISTING

DATE: 02/21/2002

PATENT APPLICATION: US/09/308,435B

TIME: 09:58:45

Input Set : A:\Astra560.app.txt

Output Set: N:\CRF3\02212002\I308435B.raw

3 <110> APPLICANT: Astra Aktiebolag
 5 <120> TITLE OF INVENTION: Vaccine Delivery System and Method of Production
 7 <130> FILE REFERENCE: 1103326-0560
 9 <140> CURRENT APPLICATION NUMBER: 09/308,435B
 10 <141> CURRENT FILING DATE: 1999-05-19
 12 <150> PRIOR APPLICATION NUMBER: PCT/SE99/00582
 13 <151> PRIOR FILING DATE: 1999-04-09
 15 <150> PRIOR APPLICATION NUMBER: SE 9801288-3
 16 <151> PRIOR FILING DATE: 1998-04-14
 18 <160> NUMBER OF SEQ ID NOS: 25
 20 <170> SOFTWARE: PatentIn Ver. 2.1
 22 <210> SEQ ID NO: 1
 23 <211> LENGTH: 1670
 24 <212> TYPE: DNA
 25 <213> ORGANISM: Helicobacter pylori
 27 <220> FEATURE:
 28 <221> NAME/KEY: CDS
 29 <222> LOCATION: (793)..(1572)
 31 <400> SEQUENCE: 1

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 36 gatttgattt tagggaatta catgcaagtg aatgaaaaaa acattcaagc gtttgccccc 180
 38 aaacaataag gtaaaaaatg ccactcactc atttgaatga agaaaaatcaa cctaaaaatgg 240
 40 tggatatagg ggataaagaa accactgaaa gaatcgctct agcaagcggt cgtatcagca 300
 42 tgaataaaga ggcttatgac gctattatca atcatggcgt caaaaaaggg cgggtattac 360
 44 aaactgctat tattgctggg attatggggg ctaaaaagac aagcgaaactc attcccatgt 420
 46 gccatccaat catgctcaat ggggtggata ttgatatatt agaagaaaaa gagacttgta 480
 48 gtttttaact ctatgcgaga gtcaaaactc aagctaaaaa gggcgtagaa atggaagcgc 540
 50 taatgagtgt gagcgtaggg cttttaacca tttatgacat ggtgaaagcc attgataaga 600
 52 gcatgacaat tagcgggtgt atgctggaat ataaaagtgg aggcaaaagt ggggattata 660
 54 acgctaaaaa atagaaaaag actgataatc taaagatatt agggtaaaat aacattttga 720
 56 caacaaaagc gtgttggttg cttcggattt gttgttatag aagtctaaaa tattacaatc 780
 58 aaggatagaa cg atg aga gca aat aat cat ttt aaa gat ttt gca tgg aaa 831
 59 Met Arg Ala Asn Asn His Phe Lys Asp Phe Ala Trp Lys
 60 1 5 10
 62 aaa tgc ctt tta ggc gcg agc gtg gtg gct tta tta gtg gga tgc agc 879
 63 Lys Cys Leu Leu Gly Ala Ser Val Val Ala Leu Leu Val Gly Cys Ser
 64 15 20 25
 66 ccg cat att att gaa acc aat gaa gtc gct ttg aaa ttg aat tac cat 927
 67 Pro His Ile Ile Glu Thr Asn Glu Val Ala Leu Lys Leu Asn Tyr His
 68 30 35 40 45
 70 cca gct agc gag aaa gtt caa gcg tta gat gaa aag att ttg ctt tta 975
 71 Pro Ala Ser Glu Lys Val Gln Ala Leu Asp Glu Lys Ile Leu Leu Leu

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MAR 06 2002
TECH CENTER 160012900

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75 Arg Pro Ala Phe Gln Tyr Ser Asp Asn Ile Ala Lys Glu Tyr Glu Asn
76          65          70          75
78 aaa ttc aag aat caa acc gcg ctc aag gtt gaa cag att ttg caa aat 1071
79 Lys Phe Lys Asn Gln Thr Ala Leu Lys Val Glu Gln Ile Leu Gln Asn
80          80          85          90
82 caa ggc tat aag gtt att agc gta gat agc agc gat aaa gac gat ttt 1119
83 Gln Gly Tyr Lys Val Ile Ser Val Asp Ser Ser Asp Lys Asp Asp Phe
84          95          100          105
86 tct ttt gca caa aaa aaa gaa ggg tat ttg gcg gtt gct atg aat ggc 1167
87 Ser Phe Ala Gln Lys Lys Glu Gly Tyr Leu Ala Val Ala Met Asn Gly
88 110          115          120          125
90 gaa att gtt tta cgc ccc gat cct aaa agg acc ata cag aaa aaa tca 1215
91 Glu Ile Val Leu Arg Pro Asp Pro Lys Arg Thr Ile Gln Lys Lys Ser
92          130          135          140
94 gaa ccc ggg tta tta ttc tcc acc ggt ttg gac aaa atg gaa ggg gtt 1263
95 Glu Pro Gly Leu Leu Phe Ser Thr Gly Leu Asp Lys Met Glu Gly Val
96          145          150          155
98 tta atc ccg gct ggg ttt att aag gtt acc ata cta gag cct atg agt 1311
99 Leu Ile Pro Ala Gly Phe Ile Lys Val Thr Ile Leu Glu Pro Met Ser
100          160          165          170
102 ggg gaa tct ttg gat tct ttt acg atg gat ttg agc gag ttg gac att 1359
103 Gly Glu Ser Leu Asp Ser Phe Thr Met Asp Leu Ser Glu Leu Asp Ile
104          175          180          185
106 caa gaa aaa ttc tta aaa acc acc cat tca agc cat agc ggg ggg tta 1407
107 Gln Glu Lys Phe Leu Lys Thr Thr His Ser Ser His Ser Gly Gly Leu
108 190          195          200          205
110 gtt agc act atg gtt aag gga acg gat aat tct aat gac gcg atc aag 1455
111 Val Ser Thr Met Val Lys Gly Thr Asp Asn Ser Asn Asp Ala Ile Lys
112          210          215          220
114 agc gct ttg aat aag att ttt gca aat atc atg caa gaa ata gac aaa 1503
115 Ser Ala Leu Asn Lys Ile Phe Ala Asn Ile Met Gln Glu Ile Asp Lys
116          225          230          235
118 aaa ctc act caa aag aat tta gaa tct tat caa aaa gac gcc aaa gaa 1551
119 Lys Leu Thr Gln Lys Asn Leu Glu Ser Tyr Gln Lys Asp Ala Lys Glu
120          240          245          250
122 tta aaa ggc aaa aga aac cga taaaaacaaa taacgcataa gaaaagaacg 1602
123 Leu Lys Gly Lys Arg Asn Arg
124          255          260
126 cttgaataaaa ctgcttaaaa aggggtttttt agcggttcttt ttgagcgtgt atttaagggc 1662
128 tgatgatc 1670
131 <210> SEQ ID NO: 2
132 <211> LENGTH: 260
133 <212> TYPE: PRT
134 <213> ORGANISM: Helicobacter pylori
136 <400> SEQUENCE: 2
137 Met Arg Ala Asn Asn His Phe Lys Asp Phe Ala Trp Lys Lys Cys Leu
138 1 5 10 15

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140 Leu Gly Ala Ser Val Val Ala Leu Leu Val Gly Cys Ser Pro His Ile
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143 Ile Glu Thr Asn Glu Val Ala Leu Lys Leu Asn Tyr His Pro Ala Ser
144           35           40           45
146 Glu Lys Val Gln Ala Leu Asp Glu Lys Ile Leu Leu Leu Arg Pro Ala
147           50           55           60
149 Phe Gln Tyr Ser Asp Asn Ile Ala Lys Glu Tyr Glu Asn Lys Phe Lys
150           65           70           75           80
152 Asn Gln Thr Ala Leu Lys Val Glu Gln Ile Leu Gln Asn Gln Gly Tyr
153           85           90           95
155 Lys Val Ile Ser Val Asp Ser Ser Asp Lys Asp Asp Phe Ser Phe Ala
156           100          105          110
158 Gln Lys Lys Glu Gly Tyr Leu Ala Val Ala Met Asn Gly Glu Ile Val
159           115          120          125
161 Leu Arg Pro Asp Pro Lys Arg Thr Ile Gln Lys Lys Ser Glu Pro Gly
162           130          135          140
164 Leu Leu Phe Ser Thr Gly Leu Asp Lys Met Glu Gly Val Leu Ile Pro
165           145          150          155          160
167 Ala Gly Phe Ile Lys Val Thr Ile Leu Glu Pro Met Ser Gly Glu Ser
168           165          170          175
170 Leu Asp Ser Phe Thr Met Asp Leu Ser Glu Leu Asp Ile Gln Glu Lys
171           180          185          190
173 Phe Leu Lys Thr Thr His Ser Ser His Ser Gly Gly Leu Val Ser Thr
174           195          200          205
176 Met Val Lys Gly Thr Asp Asn Ser Asn Asp Ala Ile Lys Ser Ala Leu
177           210          215          220
179 Asn Lys Ile Phe Ala Asn Ile Met Gln Glu Ile Asp Lys Lys Leu Thr
180           225          230          235          240
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183           245          250          255
185 Lys Arg Asn Arg
186           260

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190 <210> SEQ ID NO: 3

191 <211> LENGTH: 1670

192 <212> TYPE: DNA

193 <213> ORGANISM: Helicobacter pylori

195 <220> FEATURE:

196 <221> NAME/KEY: CDS

197 <222> LOCATION: (793)..(1572)

199 <400> SEQUENCE: 3

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204 gatttgattt tagggaatta catgcaagtg aatgaaaaaa acattcaagc gtttgcccc 180
206 aaacaataag gtaaaaaatg ccaactcactc atttgaatga agaaaaatcaa cctaaaaatgg 240
208 tggatatagg ggataaagaa accactgaaa gaatcgctct agcaagcggg cgtatcagca 300
210 tgaataaaga ggcttatgac gctattatca atcatggcgt caaaaagggt ccggtattac 360
212 aaactgctat tattgctggg attatggggg ctaaaaagac aagcgaactc attcccatgt 420
214 gccatccaat catgctcaat ggggtggata ttgatatatt agaagaaaaa gagacttgta 480
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DATE: 02/21/2002

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220 gcatgacaat tagcgggtgtg atgctggaat ataaaagtgg aggcaaaagt ggggattata 660
222 acgctaaaaa atagaaaaaag actgataatc taaagatatt agggtaaaat aacattttga 720
224 caacaaaaagc gtgttggttg cttcggattt gttgttatag aagtctaaaa tattacaatc 780
226 aaggatagaa cg atg aga gca aat aat cat ttt aaa gat ttt gca tgg aaa 831
227      Met Arg Ala Asn Asn His Phe Lys Asp Phe Ala Trp Lys
228      1          5          10
230 aaa tgc ctt tta ggc gcg agc gtg gtg gct tta tta gtg gga tgc agc 879
231 Lys Cys Leu Leu Gly Ala Ser Val Val Ala Leu Leu Val Gly Cys Ser
232      15          20          25
234 ccg cat att att gaa acc aat gaa gtc gct ttg aaa ttg aat tac cat 927
235 Pro His Ile Ile Glu Thr Asn Glu Val Ala Leu Lys Leu Asn Tyr His
236      30          35          40          45
238 cca gct agc gag aaa gtt caa gcg tta gat gaa aag att ttg ctt tta 975
239 Pro Ala Ser Glu Lys Val Gln Ala Leu Asp Glu Lys Ile Leu Leu Leu
240      50          55          60
242 agg cca gct ttc caa tat agc gat aat atc gct aaa gag tat gaa aac 1023
243 Arg Pro Ala Phe Gln Tyr Ser Asp Asn Ile Ala Lys Glu Tyr Glu Asn
244      65          70          75
246 aaa ttc aag aat caa acc gcg ctc aag gtt gaa cag att ttg caa aat 1071
247 Lys Phe Lys Asn Gln Thr Ala Leu Lys Val Glu Gln Ile Leu Gln Asn
248      80          85          90
250 caa ggc tat aag gtt att agc gta gat agc agc gat aaa gac gat ttt 1119
251 Gln Gly Tyr Lys Val Ile Ser Val Asp Ser Ser Asp Lys Asp Asp Phe
252      95          100          105
254 tct ttt gca caa aaa aaa gaa ggg tat ttg gcg gtt gct atg aat ggc 1167
255 Ser Phe Ala Gln Lys Lys Glu Gly Tyr Leu Ala Val Ala Met Asn Gly
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260      130          135          140
262 gaa ccc ggg tta tta ttc tcc acc ggt ttg gac aaa atg gaa ggg gtt 1263
263 Glu Pro Gly Leu Leu Phe Ser Thr Gly Leu Asp Lys Met Glu Gly Val
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266 tta atc ccg gct ggg ttt att aag gtt acc ata cta gag cct atg agt 1311
267 Leu Ile Pro Ala Gly Phe Ile Lys Val Thr Ile Leu Glu Pro Met Ser
268      160          165          170
270 ggg gaa tct ttg gat tct ttt acg atg gat ttg agc gag ttg gac att 1359
271 Gly Glu Ser Leu Asp Ser Phe Thr Met Asp Leu Ser Glu Leu Asp Ile
272      175          180          185
274 caa gaa aaa ttc tta aaa acc acc cat tca agc cat agc ggg ggg tta 1407
275 Gln Glu Lys Phe Leu Lys Thr Thr His Ser Ser His Ser Gly Gly Leu
276      190          195          200          205
278 gtt agc act atg gtt aag gga acg gat aat tct aat gac gcg atc aag 1455
279 Val Ser Thr Met Val Lys Gly Thr Asp Asn Ser Asn Asp Ala Ile Lys
280      210          215          220
282 aga gct ttg aat aag att ttt gca aat atc atg caa gaa ata gac aaa 1503
283 Arg Ala Leu Asn Lys Ile Phe Ala Asn Ile Met Gln Glu Ile Asp Lys
284      225          230          235

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RAW SEQUENCE LISTING

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TIME: 09:58:45

Input Set : A:\Astra560.app.txt

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286 aaa ctc act caa aag aat tta gaa tct tat caa aaa gac gcc aaa gaa 1551
287 Lys Leu Thr Gln Lys Asn Leu Glu Ser Tyr Gln Lys Asp Ala Lys Glu
288      240      245      250
290 tta aaa ggc aaa aga aac cga taaaaacaaa taacgcataa gaaaagaacg 1602
291 Leu Lys Gly Lys Arg Asn Arg
292      255      260
294 cttgaataaaa ctgcttaaaaa aggggtttttt agcggttcttt ttgagcgtgt atttaagggc 1662
296 tgatgatac 1670
299 <210> SEQ ID NO: 4
300 <211> LENGTH: 260
301 <212> TYPE: PRT
302 <213> ORGANISM: Helicobacter pylori
304 <400> SEQUENCE: 4
305 Met Arg Ala Asn Asn His Phe Lys Asp Phe Ala Trp Lys Lys Cys Leu
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308 Leu Gly Ala Ser Val Val Ala Leu Leu Val Gly Cys Ser Pro His Ile
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311 Ile Glu Thr Asn Glu Val Ala Leu Lys Leu Asn Tyr His Pro Ala Ser
312 35 40 45
314 Glu Lys Val Gln Ala Leu Asp Glu Lys Ile Leu Leu Leu Arg Pro Ala
315 50 55 60
317 Phe Gln Tyr Ser Asp Asn Ile Ala Lys Glu Tyr Glu Asn Lys Phe Lys
318 65 70 75 80
320 Asn Gln Thr Ala Leu Lys Val Glu Gln Ile Leu Gln Asn Gln Gly Tyr
321 85 90 95
323 Lys Val Ile Ser Val Asp Ser Ser Asp Lys Asp Asp Phe Ser Phe Ala
324 100 105 110
326 Gln Lys Lys Glu Gly Tyr Leu Ala Val Ala Met Asn Gly Glu Ile Val
327 115 120 125
329 Leu Arg Pro Asp Pro Lys Arg Thr Ile Gln Lys Lys Ser Glu Pro Gly
330 130 135 140
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333 145 150 155 160
335 Ala Gly Phe Ile Lys Val Thr Ile Leu Glu Pro Met Ser Gly Glu Ser
336 165 170 175
338 Leu Asp Ser Phe Thr Met Asp Leu Ser Glu Leu Asp Ile Gln Glu Lys
339 180 185 190
341 Phe Leu Lys Thr Thr His Ser Ser His Ser Gly Gly Leu Val Ser Thr
342 195 200 205
344 Met Val Lys Gly Thr Asp Asn Ser Asn Asp Ala Ile Lys Arg Ala Leu
345 210 215 220
347 Asn Lys Ile Phe Ala Asn Ile Met Gln Glu Ile Asp Lys Lys Leu Thr
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VERIFICATION SUMMARY

DATE: 02/21/2002

PATENT APPLICATION: US/09/308,435B

TIME: 09:58:46

Input Set : A:\Astra560.app.txt

Output Set: N:\CRF3\02212002\I308435B.raw

STATISTICS SUMMARY

DATE: 02/21/2002

PATENT APPLICATION: US/09/308,435B

TIME: 09:58:46

Input Set : A:\Astra560.app.txt

Output Set: N:\CRF3\02212002\I308435B.raw

Application Serial Number: US/09/308,435B

Alpha or Numeric: Numeric

Application Class:

Application File Date: 05-19-1999

Art Unit: 1600

Software Application: PatentIN2.1

Total Number of Sequences: 25

Total Nucleotides: 3340

Total Amino Acids: 1613

Number of Errors: 0

Number of Warnings: 0

Number of Corrections: 0

MESSAGE SUMMARY